



CIRP: Inlet Engineering Toolbox

Problem Engineering activities in the vicinity of an inlet include navigation channel dredging dredged material placement, maintenance and modification of jetties. Inlets and associated engineering actions alter the adjacent beaches and bay, including navigation channels that often intersect the bay. Theoretical and empirical tools can be applied to forecast the equilibrium state of the inlet system with and without engineering actions. However, many of these methods are not standardized and are applied differently within the Corps. Numerical modeling with the Coastal Modeling System (CMS) provides short to mid-term estimates (days to years) estimates of inlet response to engineering activities, regional processes, and storms. All these types of results must be integrated into standard assessments, such as local and regional sediment budgets, and assessment of federal responsibility or erosion attributed to federal navigation projects. Assessment procedures are required to create Inlet Management Plans, for Section 111 studies that evaluate the Federal responsibility for navigation channels, and to estimate the equilibrium cross-sectional area of inlet channels and shoals.

Objectives To develop desktop PC and web-based tools for rapid, reconnaissance and desk-top studies of the consequences of engineering actions at coastal inlets. To develop post-processing tools that coalesce and develop statistics from detailed numerical model calculations.

- Products**
- Inlet Engineering and Channel Shoaling Toolbox (in conjunction with Geomorphologic Evolution work unit).
 - Section 111 Navigation Toolbox (in conjunction with Geomorphologic Evolution work unit).
 - CMS Sediment Budget Toolbox.

Milestones

10-01	JP: Channel Shoaling with Deepening and Widening, Cat Island Pass, LA	Nov 09
10-02	11th Annual CIRP Technology Transfer Workshop	Dec 09
10-03	Beta Release: Inlet Engineering and Channel Shoaling Toolbox; Wiki-page (shoaling tools to CPT; w.u.1LD43G)	May 10
10-04	CIRP Mini-Tech-Transfer Workshop (during CWG workshop)	Jun 10
10-05	Beta Release: Section 111 Navigation Toolbox; Wiki-page	Aug 10
10-06	CHETN: Methodology for Creating a Sediment Budget from Coastal Modeling System (CMS) Calculations; Wiki-page	Aug 10

Funding **FY10:** \$400K.

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